AMENDMENT TO THE CLAIMS

A listing of the claims presented in this patent application appears below. This listing replaces all prior versions and listing of claims in this patent application.

Claim 1 (currently amended): A method for manufacturing a copper electroplating material adapted to be fed as a copper ion supply to a copper plating bath in copper electroplating, comprising the steps of:

supplying basic copper carbonate powder having impurities into a heating furnace,

heating the basic copper carbonate powder to a temperature of 250°C to 800°C in an atmosphere which is not rendered reductive to carry out thermal decomposition of the basic copper carbonate, to thereby produce easily dissolved copper oxide powder, and

washing the easily dissolved copper oxide powder with water for reducing the impurities which have been included in the basic copper carbonate powder from the easily dissolved copper oxide powder to provide the copper electroplating material.

Claim 2 (previously presented): A method for manufacturing a copper electroplating material adapted to be fed as a copper ion supply to a copper plating bath in copper electroplating, comprising the ~~step~~ steps of:

heating basic copper carbonate powder having impurities to a temperature of 250°C to 800°C in an atmosphere which is not rendered reductive to carry out thermal decomposition of the basic copper carbonate, to thereby produce easily dissolved copper oxide powder; and

washing the easily dissolved copper oxide powder with water to reduce the impurities in the basic copper carbonate powder from the easily dissolved copper oxide powder to provide the copper electroplating material.

Claim 3 (previously presented): A method as defined in claim 1 or 2, wherein the basic copper carbonate powder is obtained by mixing an aqueous solution of a copper salt selected from the group consisting of copper chloride, copper sulfate and copper nitrate and an aqueous

solution of a carbonate of a material selected from the group consisting of alkaline metal, alkaline earth metal and ammonia (NH_4) with each other, reacting both aqueous solutions with each other while heating them, to thereby deposit a reaction product, and separating the reaction product by filtration.

Claim 4 (withdrawn): A copper electroplating material fed as a copper ion supply to a copper plating bath in copper electroplating, comprising easily dissolved copper oxide formed by heating basic copper carbonate to a temperature of 250°C to 800°C in an atmosphere which is not rendered reductive to subject it to thermal decomposition.

Claim 5 (withdrawn): A copper electroplating material fed as a copper ion supply to a copper plating bath in copper electroplating, comprising easily dissolved copper oxide formed by heating basic copper carbonate to a temperature of 250°C to 800°C in an atmosphere which is not rendered reductive to subject it to thermal decomposition, to thereby obtain a thermal decomposition product and then washing the thermal decomposition product with water.

Claim 6 (withdrawn): A copper electroplating material as defined in claim 4 or 5, wherein the basic copper carbonate is obtained by mixing an aqueous solution of a copper salt selected from the group consisting of copper chloride, copper sulfate and copper nitrate and an aqueous solution of carbonate of a material selected from alkaline metal, alkaline earth metal and ammonia (NH) with each other, reacting both aqueous solutions with each other while heating them, to thereby deposit a reaction product, and separating the reaction product by filtration.

Claim 7 (withdrawn): A copper electroplating material as defined in claim 5, wherein the basic copper carbonate is obtained by mixing an aqueous solution of a copper salt selected from the group consisting of copper chloride, copper sulfate and copper nitrate and an aqueous solution of carbonate of a material selected from alkaline metal, alkaline earth metal and ammonia (NH_4) with each other, keeping the mixed solution at a pH within a range of between

7.0 and 9.0, reacting both aqueous solutions with each other while heating them, to thereby deposit a reaction product, and separating the reaction product by filtration.

Claim 8 (withdrawn): A copper electroplating material as defined in claim 4 or 5, which is fed to a plating bath in which an insoluble anode and a plated object acting as a cathode are arranged.

Claim 9 (withdrawn): A copper plating method comprising the steps of:

feeding a copper electroplating material as defined in claim 4 or 5 to a plating bath in which an insoluble anode and a plated object acting as a cathode are arranged; and

subjecting the plated object to copper plating.

Claim 10 (withdrawn): A method for manufacturing a copper electroplating material fed as a copper ion supply to a copper plating bath in copper electroplating, comprising the steps of:

mixing an aqueous cupric chloride solution and an aqueous solution containing a carbonate ion with each other to prepare a mixed solution;

keeping the mixed solution at a pH within a range of between 8.0 and 9.0 and a temperature within a range of between 75°C and 90°C to form basic copper carbonate; and

subjecting the basic copper carbonate to solid-liquid separation and washing, so that the basic copper carbonate may have a chlorine concentration of 80 ppm or less.

Claim 11 (withdrawn): A method for manufacturing a copper electroplating material fed as a copper ion supply to a copper plating bath in copper electroplating, comprising the steps of:

mixing an aqueous cupric sulfate solution and an aqueous solution containing a carbonate ion with each other to prepare a mixed solution;

keeping the mixed solution at a pH within a range of between 8.0 and 9.0 and a temperature within a range of between 75°C and 90°C to form basic copper carbonate; and

subjecting the basic copper carbonate to solid-liquid separation and

washing, so that the basic copper carbonate may have a SO_4 concentration of 200ppm or less.

Claim 12 (withdrawn): A method for manufacturing a copper electroplating material fed as a copper ion supply to a copper plating bath in copper electroplating, comprising the steps of:

feeding an aqueous cupric sulfate solution and an aqueous solution containing a carbonate ion to a reaction tank while adjusting a feed ratio between both aqueous solutions so that a molar ratio of a copper ion to a carbonate ion in a mixed solution of both aqueous solutions may be within a range of between 1:1.3 to 2.6;

keeping a temperature of the mixed solution at a level of 95°C or more without pH control of the mixed solution to produce basic copper carbonate; and

subjecting the basic copper carbonate to solid-liquid separation and washing, to thereby provide the copper electroplating material constituted by the basic copper carbonate.

Claim 13 (withdrawn): A method for manufacturing basic copper carbonate fed as a copper ion supply to a copper plating bath in copper electroplating, comprising the steps of:

feeding an aqueous cupric sulfate solution and an aqueous solution containing a carbonate ion to a reaction tank while adjusting a feed ratio between both aqueous solutions so that a molar ratio of a copper ion to carbonate ion in a mixed solution of both aqueous solutions may be within a range of between 1:2.3 to 4.6;

keeping a temperature of the mixed solution at a level of 95°C or more without pH control of the mixed solution to produce basic copper carbonate; and

subjecting the basic copper carbonate to solid-liquid separation and washing, to thereby provide the copper electroplating material constituted by the basic copper carbonate.